

Home Appliance Repairers

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Significant Points

- Repairers of small appliances commonly learn the trade on the job; repairers of large household appliances often receive their training in a formal trade school, community college, or directly from the appliance manufacturer.
- Knowledge of electronics is increasingly important.
- Job prospects are expected to be good as job openings will continue to outnumber jobseekers.

Nature of the Work

Anyone whose washer, dryer, or refrigerator has ever broken knows the importance of a dependable repair person. Home appliance repairers, often called service technicians, keep home appliances working and help prevent unwanted breakdowns. Some repairers work specifically on small appliances such as microwaves and vacuum cleaners; others specialize in major appliances such as refrigerators, dishwashers, washers, and dryers.

Home appliance repairers visually inspect appliances and check for unusual noises, excessive vibration, fluid leaks, or loose parts to determine why the appliances fail to operate properly. They use service manuals, troubleshooting guides, and experience to diagnose particularly difficult problems. Repairers disassemble the appliance to examine its internal parts for signs of wear or corrosion. They follow wiring diagrams and use testing devices such as ammeters, voltmeters, and wattmeters to check electrical systems for shorts and faulty connections.

After identifying problems, home appliance repairers replace or repair defective belts, motors, heating elements, switches, gears, or other items. They tighten, align, clean, and lubricate parts as necessary. Repairers use common handtools, including screwdrivers, wrenches, files, and pliers, as well as soldering guns and special tools designed for particular appliances. When repairing appliances with electronic parts, they may replace circuit boards or other electronic components.

When repairing refrigerators and window air-conditioners, repairers must use care to conserve, recover, and recycle chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants used in the cooling systems, as required by law. Repairers conserve the refrigerant by making sure there are no leaks in the system; they recover the refrigerant by venting it into proper cylinders; and they recycle the refrigerant, with special filter-dryers, so that it can be used again. Federal regulations also require that home appliance repairers document the capture and disposal of refrigerants.

Home appliance repairers generally install household durable goods such as refrigerators, washing machines, and cooking products. They may have to install pipes in a customer's home to connect the appliances to the gas line. They measure, lay out, cut, and thread pipe and connect it to a feeder line and to the appliance. They may have to saw holes in walls or floors and hang steel supports from beams or joists to hold gas pipes in place. Once the gas line is in place, they turn on the gas and check for leaks. *Gas appliance repairers* check the heating unit and replace tubing, thermocouples, thermostats, valves, and indicator spindles. They also answer emergency calls about gas leaks.

Repairers also answer customers' questions about the care and use of appliances. For example, they demonstrate how to load au-

tomatic washing machines, arrange dishes in dishwashers, or sharpen chain saws to maximize performance.

Repairers write up estimates of the cost of repairs for customers, keep records of parts used and hours worked, prepare bills, and collect payments. Self-employed repairers also deal with the original appliance manufacturers to recoup monetary claims for work performed on appliances still under warranty.

Working Conditions

Home appliance repairers who handle portable appliances usually work in repair shops that are generally quiet and adequately lighted and ventilated. Those who repair major appliances usually make service calls to customers' homes. They carry their tools and a number of commonly used parts with them in a truck or van for use on their service calls. Repairers may spend several hours a day driving to and from appointments and emergency calls. They may work in clean comfortable rooms such as kitchens, or in damp, dirty, or dusty areas of a home. Repairers sometimes work in cramped and uncomfortable positions when they are replacing parts in hard-to-reach areas of appliances. Repairer jobs generally are not hazardous, but workers must exercise care and follow safety precautions to avoid electrical shocks and injuries when lifting and moving large appliances. When repairing gas appliances and microwave ovens, repairers must be aware of the dangers of gas and radio frequency energy leaks.

Home appliance repairers usually work with little or no direct supervision, a feature of the job that is appealing to many people. Many home appliance repairers work a standard 40-hour week but may work overtime and weekend hours in the summer months, when they are in high demand to fix air-conditioners and refrigerators. Some repairers work early morning, evening, and weekend shifts and may remain oncall in case of emergency.

Employment

Home appliance repairers held nearly 42,000 jobs in 2002. About 41 percent of salaried repairers worked in retail trade establishments such as department stores and electronics and appliance stores. About 17 percent of repairers are self-employed. Almost every community in the country employs appliance repairers; a high concentration of jobs is found in more populated areas.



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Training, Other Qualifications, and Advancement

Employers generally require a high school diploma for home appliance repairer jobs. Repairers of small appliances commonly learn the trade on the job; repairers of large household appliances often receive their training in a formal trade school, community college, or directly from the appliance manufacturer. Mechanical and electrical aptitudes are desirable, and those who work in customers' homes must be courteous and tactful.

Employers prefer to hire people with formal training in appliance repair and electronics. Many repairers complete 1- or 2-year formal training programs in appliance repair and related subjects in high schools, private vocational schools, and community colleges. Courses in basic electricity and electronics are increasingly important as more manufacturers install circuit boards and other electronic control systems in home appliances.

Whether their basic skills are developed through formal training or on the job, trainees usually receive additional training from their employer and from manufacturers. In shops that fix portable appliances, they work on a single type of appliance, such as a vacuum cleaner, until they master its repair. Then they move on to others, until they can repair all those handled by the shop. In companies that repair major appliances, beginners assist experienced repairers on service visits. They may also study on their own. They learn to read schematic drawings, analyze problems, determine whether to repair or replace parts, and follow proper safety procedures. Up to 3 years of on-the-job training may be needed for a technician to become skilled in all aspects of repair.

Some appliance manufacturers and department store chains have formal training programs that include home study and shop classes, in which trainees work with demonstration appliances and other training equipment. Many repairers receive supplemental instruction through 2- or 3-week seminars conducted by appliance manufacturers. Experienced repairers also often attend training classes and study service manuals. Repairers authorized for warranty work by manufacturers are required to attend periodic training sessions.

The U.S. Environmental Protection Agency (EPA) has mandated that all repairers who buy or work with refrigerants must be certified in their proper handling; a technician must pass a written examination to become certified to buy and handle refrigerants. Exams are administered by organizations approved by the EPA, such as trade schools, unions, and employer associations. There are even EPA-approved take-home certification exams. Though no formal training is required for certification, many of these organizations offer training programs designed to prepare workers for the certification examination.

In addition to certification required by the EPA, home appliance repairers may exhibit their competence by passing a certification examination offered by various organizations. Although voluntary, such certification can be helpful when one is seeking employment. The National Appliance Service Technician Certification (NASTeC), which is administered by the International Society of Certified Electronics Technicians (ISCET), requires repairers to pass a comprehensive examination testing their competence in the diagnosis, repair, and maintenance of major home appliances. Examinations are given in three specialty areas of appliance repair: Refrigeration and air-conditioning, cooking, or laundry and dishwashing. Although the NASTeC credential does not expire, continuing education classes are available so repairers can keep abreast of technological changes. The Professional Service Association (PSA) also administers a certification program, with goals similar to the NASTeC program. Those who pass the PSA examination earn the Certified Appliance Professional (CAP) designation, which is valid for 4 years. If certified repairers complete

at least 60 credit hours of instruction every year during the 4 years, they need not take the recertification examination. Otherwise, they must take the examination again.

Repairers in large shops or service centers may be promoted to supervisor, assistant service manager, or service manager. Some repairers advance to managerial positions such as regional service manager or parts manager for appliance or tool manufacturers. Preference is given to those who demonstrate technical competence and show an ability to get along with other workers and customers. Experienced repairers who have sufficient funds and knowledge of small-business management may open their own repair shop.

Job Outlook

Good job prospects are expected as job openings will continue to outnumber jobseekers. Many potential workers may choose not to enter this occupation because they prefer work that is less strenuous and that has more comfortable working conditions. Employment of home appliance repairers is expected to increase more slowly than average for all occupations through the year 2012. Although employment of self-employed home appliance repairers is projected to decline, employment of wage and salary workers will increase about as fast as average.

The number of home appliances in use is expected to increase with growth in the numbers of households and businesses. Appliances are also becoming more technologically advanced and will increasingly require a skilled technician to diagnose and fix problems. In recent years, many consumers have tended to purchase new appliances when existing warranties expired rather than invest in repairs on old appliances. However, over the next decade, as more consumers purchase higher priced appliances designed to have much longer lives, they will be more likely to use repair service than to purchase new appliances. Employment is relatively steady during economic downturns because there is still demand for appliance repair services. In addition to new jobs created over the 2002-12 period, openings will arise as home appliance repairers retire or transfer to other occupations.

Self employment of home appliance repairers will continue to decline due to the availability of manufacturer-sponsored training programs. Manufacturers often make these programs available only to large equipment dealers, thereby discouraging repairers from becoming self-employed or working for small shops. Many self-employed repairers are forced to join larger shops so that they can stay abreast of developments in the industry. Jobs are expected to be increasingly concentrated in larger companies as the numbers of smaller shops and family-owned businesses decline. However, repairers who maintain strong industry relationships may still go into business for themselves.

Earnings

Median annual earnings, including commission, of home appliance repairers were \$30,390 in 2002. The middle 50 percent earned between \$22,900 and \$39,800 a year. The lowest 10 percent earned less than \$18,210, and the highest 10 percent earned more than \$48,170 a year. Median annual earnings of home appliance repairers in 2002 in the electronics and appliance stores industry, which employs the largest number of these workers was \$27,340.

Earnings of home appliance repairers vary according to the skill level required to fix equipment, geographic location, and the type of equipment repaired. Because many repairers receive commission along with their salary, earnings increase along with the number of jobs a repairer can complete in a day.

Many larger dealers, manufacturers, and service stores offer typical benefits such as health insurance coverage, sick leave, and

retirement and pension programs. Some home appliance repairers belong to the International Brotherhood of Electrical Workers.

Related Occupations

Other workers who repair electrical and electronic equipment include electrical and electronics installers and repairers; electronic home entertainment equipment installers and repairers; small-engine mechanics; coin, vending, and amusement machine servicers and repairers; and heating, air-conditioning, and refrigeration mechanics and installers.

Sources of Additional Information

For general information about the work of home appliance repairers, contact:

- North American Retail Dealers Association, 10 E. 22nd St., Suite 310, Lombard, IL 60148.
- National Appliance Service Association, P.O. Box 2514, Kokomo, IN 46904.
- United Servicers Association, Inc., 6428 Coldwater Canyon Ave., North Hollywood, CA 91606.

For information on the NASTeC certification program, contact:

- International Society of Certified Electronics Technicians, 3608 Pershing Ave., Fort Worth, TX 76107. Internet: <http://www.iscet.org>

For information on the Certified Appliance Professional program, contact:

- Professional Service Association, 71 Columbia St., Cohoes, NY 12047.